ARNAV KUMAR

+1 (347) 277-6077 • arnavkumar24@gmail.com • arnavk
arnavkumar.com • in arnavkumar24 • @_arnavkumar

Education

- **Carnegie Mellon University**, School of Computer Science — Pittsburgh, PA
  - Master of Science in Intelligent Information Systems — (Aug 2017 - Dec 2018)
- **Nanyang Technological University**, School of Computer Science and Engineering — Singapore
  - Bachelor of Engineering (Honours) in Computer Science with a GPA of **4.78/5**. — (Aug 2010 – Jun 2014)
  - Specialization in Intelligent Systems, Minor in Business.

Professional Experience

- **Zendesk, Inc.** - *Senior Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore — (Jul 2016 - Aug 2017)
- **Zendesk, Inc.** - *Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore — (Jul 2014 - Jul 2016)
  - As Engineering Lead for the internal push-notification microservice project, re-wrote session management logic, architected new systems and infrastructure to support robust push notification delivery.
  - As Engineering Lead for the internal microservice for feature entitlement, designed the underlying rule-engine, architected and led development for the service, serving ~10k RPS at peak.
  - *Public Rest API* - Worked on v1.0 of the Zendesk Chat public REST API.
    * Wrote the view transformation layer to transform internal data models into publicly consumable data,
    * Developed internal structure for authorization checks
  - Worked on various iterations of the application that powers live chat, working on features like REST API for ongoing chats, support for concurrent sessions, low-level protocol enhancements etc.
  - Replaced legacy billing system by integrating with the shared Zendesk-wide billing service, followed by writing mechanisms to migrate existing customers to it en masse.
  - Wrote the event framework that produces product-wide events to Kafka. Some were piped via a pool of Logstash servers depending on importance and volume.
  - For an internal webhooks project, developed attempt and retry mechanism for payload delivery.
  - Made several improvements to the unit test suite: improvements to the test suite lifecycle, increased coverage and heavily reduced suite run-times with micro-optimizations.
  - *Miscellanous Responsibilites* - Hiring; mentoring; maintenance of dev environments, staging servers & CI setup. *Technologies Used* - Python, Django, Flask, Celery, Nose, JavaScript, Node, Redis & Redis Cluster, Memcached, Kafka, Logstash, MySQL, Docker, etc.
- **IBM Corporation** - *Software Engineering Intern*, Singapore — (May 2013 - Aug 2013)
- **IBM Corporation** - *Software Engineering Intern*, Singapore — (Jun 2012 - Dec 2012)
  - Built the fully-featured, UIWebView-based embedded browser for a mobile port of IBM Security Access Manager for Enterprise Single Sign-On, ISAM-ESSOm, for providing web single sign-on capabilities on the iOS platform.

Open Source Contributions (Selected)

- **TwitterCLDR** - Regular contributor to Twitter's open source JavaScript implementation of the ICU (International Components for Unicode) that uses the Common Locale Data Repository to format dates, plurals, and more. Implemented features such as Text Segmentation, Unicode Regex Parser, Rule-based number formatting etc.
- **raven-python** - Added support for capture-sampling per message. Added support for logging filters, and logging exclusions when used with Flask.
- **txconnpool** - Added support to create a connection pool to a pool of servers rather than just 1.
- **blinker** - Added support for sending signals without propagating resulting exceptions and support for connecting via multiple objects in a single decorator.

Technical Skills

- Languages: Comptetent: Python. Familiar: Javascript, CoffeeScript, Java, Objective-C, and others.
- Technologies (miscellaneous): Django, Flask, Celery, Nose, Node, Jasmine, Redis, Redis Cluster, Memcached, MySQL, Kafka, Docker, Logstash etc.

Other Projects (Selected)

- **Virtual Interaction with Physical Objects Using Kinect and iPhone** - *Final Year Project* - Interfacing a Kinect, an iPhone, and a projector with a central server to process motion to demonstrate virtual interaction with real objects.
- **Facebook Search** - *Information Retrieval* - App to perform full text search on a user's post history.
- **Twitter Visualizer** - *Data Mining* - App to generate a timeline for the worldwide flow of hashtags and track local trends.
- **Twitter Summarizer** - *NLP* - An app to summarise information on a topic by extracting descriptive phrases from tweets.
- **dBauggle** - *Software Engineering* - iOS word-game for children with special needs, built with cocos2d.
- **Pebble Music Tweeter** - *Hobby* - Pebble Watchapp + companion iOS app using the Twitter API and Pebble SDK to Tweet the currently playing music from the smartwatch.

Extra-Curricular Activities (University)

- **NTU Open Source Society**   (Aug 2010 - May 2014)
  - **President** in AY2012-13, **Vice-President** in AY2011-12
- **IT & Media Officer - Computer Engineering Club** (**Students' Council**)   (Sept 2012 - Aug 2013)
- **Layout Editor - The Tribune**, Official Campus Newspaper   (Sept 2011 - Aug 2012)

Awards

- **Dean's List** - Academic Year 2012-13, Academic Year 2013-14
- Awarded President's Research Scholarship - offered to the top 5% of the cohort - Academic Year 2011-12